

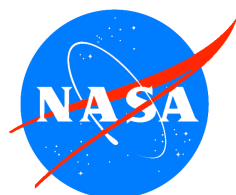
NASA SCIENCE MISSION DIRECTORATE

*Earth Science Division
Applied Sciences Program
Coastal Management Program Element
FY2007-2011 Plan*



FINAL DRAFT

Date: 11/13/2006



*Expanding and accelerating the realization of economic and societal
benefits from Earth system science, information, and technology*

FINAL DRAFT

NASA Earth Science Division - Applied Sciences Program

Coastal Management Program Element

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The Applied Sciences Program websites contain additional information about the program and this program element:

Applied Sciences Program:	http://science.hq.nasa.gov/earth-sun/applications
Coastal Management Element:	http://science.hq.nasa.gov/earth-sun/applications/theme5.htm
Project Tracking & Reporting	http://aiwg.gsfc.nasa.gov

NASA Science Mission Directorate – Applied Sciences Program

Coastal Management Program Element Plan: FY 2007 - 2011

I. Purpose and Scope

The NASA Applied Sciences Program collaborates with partner organizations to enhance the application of NASA Earth science research results to serve issues of national priority. The desired outcome is for partner organizations to use project results, such as prototypes and benchmark reports, to enable the sustained, operational use of Earth science products and enhance their decision support capabilities.

The Coastal Management Program Element is one of twelve National Applications elements in the Applied Sciences Program. The goal of the Coastal Management Program Element is to:
Enable partners' beneficial use of NASA Earth science research results to enhance decision support capabilities serving their coastal management and policy responsibilities and to expand the sustained use of NASA Earth science products within the coastal community.

This plan articulates the direction, objectives, and projects for the Coastal Management Program Element (a.k. a., program) for FY2007-2011. The program supports partners on issues of concern related to a wide range of coastal environments, including coastal zones, nearshore environments, marine and open-ocean activities, wetlands, estuaries, reefs, oceanic islands, and coasts of large inland waters. The program has organized its activities to focus on the following themes related to coastal, marine, and oceanic regions:

- Coastal Hazards
- Coastal Resource Management (particularly living marine resources)
- Coastal Ecosystem Management
- Coastal Water Quality
- Coastal Planning associated with Sea Level Change

Since coastal issues are often regional in nature, the program works with partners on regional decision support systems if the regional issue is of national importance and value.

By 2011, the primary goal of the Coastal Management Program Element is to benchmark the potential improvement of NASA Earth Science research results from at least 7 different sensors and Earth science models to at least 3 different decision support systems related to coastal management.

NASA partners with Federal agencies and regional-national organizations that have coastal management responsibilities and mandates to support coastal resource managers. Currently, the primary partners are the National Oceanic and Atmospheric Administration (NOAA), US Environmental Protection Agency (EPA), and the Naval Research Laboratory (NRL). The program participates with international organizations on coastal activities, usually through a US partner. Some Coastal Management activities may relate to the Water Management, Ecological Forecasting, Disaster Management, and other program elements. Through its activities, the Coastal Management program provides results for NASA support to Administration, interagency, and international activities, including the Subcommittee on Ocean Science and Resource Management Integration (SIMOR), Group on Earth Observations (GEO), and Integrated Global Observing Strategy (IGOS).

The program serves the 2006 NASA Strategic Plan Goal 3, and the 2007 NASA Integrated Budget and Performance Document (IBPD) Multiyear Outcome 3A.7 Annual Performance Goal 7ESS11.

Examples of Earth science missions for the program include: Jason, QuikSCAT, Terra, and Aqua as well missions in planning and formulation, such as Ocean Surface Topography Mission (OSTM), Aquarius, and NPP. Examples of Earth science models include NCOM, POM, SWAN, SHORECIRC, and ADCIRC. Project plans associated with the Coastal Management program articulate the specific project activities to apply Earth science measurements, including specific sensors and models.

II. Objectives: FY2007-2011

In FY07, the program's priority activities focus on:

- Benchmarking performance of MODIS products to Harmful Algal Bloom (HAB) Bulletin
- Completing Decisions04 Augmentation projects
- Initiating project concepts identified with NOAA on marine fisheries (with Ecological Forecasting)
- Initiating activities with MMS and PNNL Collaboratory in Gulf region
- Expanding program projects beyond Gulf of Mexico region
- Evaluating potential of NPP, OSTM, Aquarius in coastal decision support systems
- Investigating opportunities related to sea level change issues
- Initiating use of Solutions Networks on coastal issues to generate ISS ideas

In FY08-11, the program's priorities focus on

- GEO Coastal Community of Practice and Gulf of Mexico Alliance projects
- Potential joint solicitation with NOAA on Marine Fisheries projects
- Validating and benchmarking ROSES05 projects
- Evaluating and extending products from future sensors (e.g. Glory, GPM, others)
- Soliciting projects to begin in FY08-FY11

The Coastal Management program pursues the following specific, short- and near-term objectives:

Short-term Objectives (FY07)

QI - II 2007

Complete Decisions-Augmentation projects on oil spills (Gulf of Alaska)

Complete Decisions-Augmentation projects on gas flarings (Gulf of Mexico)

Transition REASoN HAB forecasting techniques to NOAA.

Initiate ROSES05 projects and complete project plans.

Assess project concepts with MMS and US Coast Guard

Investigate opportunities related to sea level change and wetlands management

Evaluate potential of NPP, Aquarius products to serve HAB Bulletin and other decision support systems mentioned in this plan..

QIII - IV 2007

Complete benchmark report on performance of MODIS, QuikSCAT, and NCOM in HAB Bulletin (REASoN project).

Review PNNL Collaboratory activities in Gulf of Mexico.

Complete an overview of models (coastal/ocean models, coupled models, ecosystem models, etc.) for potential benefit to coastal decision support systems related to HAB, sea level change assessments.

Develop project concepts with NOAA Coastal Services Center for FY08 supporting GEO and sea level rise.

Assess and possibly pursue a joint solicitation with NOAA on Marine Fisheries (with Eco Forecasting).

Evaluate potential of OSTM products to serve HAB Bulletin and other coastal decision support systems mentioned in this plan.

Complete benchmark reports on two of the four NOAA Marine Fisheries projects.

Complete SN/RPC activities on possible 'integrated system solutions' of NASA products to support Gulf of Mexico Alliance activities.

Near-term Objectives (FY07-FY10)

2008

Evaluate potential of Glory products to serve HAB, sea level change, other coastal decision support systems mentioned in this plan.

Publish at least two articles in FY07-08 on coastal applications of Earth science results, including at least one in a peer-reviewed journal.

Support CCSP and USGEO activities related to coastal management and sea level change.

Assess and possibly pursue an MOU with MMS.

Complete benchmark reports on remaining two NOAA Marine Fisheries projects.

Complete benchmark report on Marine Mammal Avoidance project (ROSES05 & Decisions04-Augmentation)

2009

Evaluate potential of missions resulting from OCO to serve HAB, sea level change, other coastal decision support systems mentioned in this plan.

Conduct a review of Federal agency strategic plans on coastal management priorities (update to FY05 review).

Complete benchmark report from WAVCIS project (ROSES05)

Complete benchmark report from NOAA-Peru Fisheries project (ROSES05)

2010

Evaluate application of LDCM products to serve priority coastal decision support systems.

Complete benchmark reports from ROSES07 projects.

2011

Evaluate application of GPM products to serve priority coastal decision support systems.

Verify, validate, and complete benchmark reports on performance of NASA science products from at least 5 sensors and models into at least 3 separate coastal issues or decision support systems.

Complete benchmark reports from ROSES08 projects

III. Coastal Management Issues, Related Research, and Decision Support Tools

Potential Coastal Management Issues: FY07-FY11

The program routinely consults with partners to identify important issues facing the coastal community, examines associated decision support systems, and determines priorities within the Coastal Management program portfolio.

The program currently organizes its activities around 5 themes and a program management function; the program does not pursue activities under the 5 themes in every year.

- Coastal Hazards: HAB, Hypoxia, Storm Surge, Oil Spills, and Search and Rescue
- Resources Management: Fisheries, Marine Mammals, Sediments, and Shipping
- Ecosystem Management: Wetlands Management, Coral Reefs, Marine Sanctuaries
- Water Quality: Coastal pollution, Urban interface/stormwater, HAB/Hypoxia
- Planning-Sea Level Change: Subsidence, Intrusion, Mitigation/Adaptation, Storm Surge
- Program Management: Studies and reports, Conference support, Meetings and workshops

The program assesses direction and priorities from the CCSP strategic plan and assessment reports as well as the priorities and workplans of SIMOR and GEO.

Coastal Management-related Research

The Coastal Management website contains a list of coastal-related research projects that the NASA Earth Science Division has supported. These projects provide insight into emerging research directions, knowledge, capabilities, and products.

Priority Decision Support Systems

The following describe priority Decision Support Systems the program focuses on in the near-term.

Harmful Algal Bloom (HAB) Forecast & HAB Mapping System

NOAA operates the HAB Forecast system to identify, track, and monitor the status of harmful algal blooms in the northern and eastern Gulf of Mexico, and NOAA operates the HAB Mapping System to give coastal managers and the public access to data and information on HAB conditions. NOAA sends notices via e-mail to coastal resource managers on HAB events. Earth science products, such as chlorophyll and winds, provide insight into location and transport of HABs. The Coastal Management application works with NOAA and NRL

on use of MODIS products, QuikSCAT winds, other products, and data fusion techniques to assist the HAB reporting. <http://www.csc.noaa.gov/crs/habf/index.html>

Marine Fisheries & Marine Mammal Avoidance

Marine fisheries represent a major natural resource and economic market, and issues regarding the management of living marine resources and the use of ocean observing systems to characterize ecosystems are receiving significant attention. Most of the spatial features that are important to ecosystems (i.e., ocean fronts, eddies, convergence zones, river plumes and coastal regions) cannot be adequately resolved without satellite data. Issues focus on stock assessment and habitat classification.

The Coastal Management team works with the Ecological Forecasting application to extend Earth science observations and model outputs to support marine fishery management practices and marine mammal avoidance, which has significant economic, international treaty, and safety of life implications.

NASA and NOAA Fisheries sponsored a workshop in May 2006 to discuss possible joint projects. Information about the workshop is available at:

<http://www.pfeg.noaa.gov/events/workshops/NASAworkshop2006/>

Sea Level Change Assessment Systems

Decision support activities related to sea-level change are typically regional in nature. Federal agencies (e.g., USGS, NOAA, and EPA) provide funding for State and local projects for sea-level change decision support, and a unified decision support system to address the national issue of sea level change does not yet exist.

Coastal elevation and sensitivity to sea-level change is one of the topics for priority synthesis products for the U.S. Climate Change Science Program. USGEO identifies an operational sea level observation system as a priority for prediction of future changes in sea level. NASA research results have produced climate simulations for inclusion in scenario assessments of sea level change due to climate variability. NASA satellite altimetry missions (TOPEX/Poseidon, Jason, and future OSTM) provide data that is useful to operational assessment of sea level change. These data, when combined with in situ measurements from coastal observing systems, can consistently aid decision-making related to coastal sea level change. Changes in sea level will have a sustained impact on coastal evolution, as both population and infrastructure in coastal regions continue to increase.

IV. Project and Activities

The Coastal Management Program Element conducts projects to support the program's goal and objectives. The projects fall into three types: Solicited Projects, Directed Projects, and Congressionally-Directed Activities. The respective Project Managers and teams are responsible for developing project plans, managing the activities, and reporting issues and results. Generally, the projects involve the following activities:

- Develop and nurture partnerships with appropriate coastal organizations;
- Identify and assess partners' coastal management responsibilities, plans, and decision support systems and evaluate capacity of Earth science results to support the partners;
- Validate & verify application of Earth science results with partners, including development of prototypes;
- Cooperate with partners to document the performance and value of Earth science results relative to partners' benchmarks and to support adoption into operational use; and,
- Communicate results & partners' achievements to appropriate coastal communities and stakeholders.

Plans, status, and results for each project are available through: <http://aiwg.gsfc.nasa.gov>

A. Solicited Projects

The program selects projects through competitive, peer-reviewed solicitations, including REASoN CAN, Decisions04 CAN, and the Research Opportunities in Space and Earth Sciences (ROSES) 2005 Announcement. The program expects to solicit projects annually in FY07-11 through the ROSES announcement. The program may provide funds to projects identified through other NASA solicitations if the projects have specific ties to the program's objectives. The Coastal team facilitates appropriate partnerships between selected investigators and the NASA Coastal Management program's partners.

Project: REASoN				Solicited / Competitively	
<p>The purpose of this project is to assess the potential for MODIS, QuikSCAT, NCOM, ADCIRC to improve the performance of NOAA's Harmful Algal Bloom Bulletin used in assessing HAB threats, transport, and demise for to alert local officials, beach managers, and fishers..</p> <p>Project includes activities to modify algorithms, utilize data-fusion techniques, produce routine products, and enable use of coastal-ocean model products to support the coastal resource management community in the Gulf of Mexico. FY07: Benchmark Earth science products in HAB Bulletin and Forecasting System (production of products continues through end of cooperative agreement.). The cooperative agreement will shift to focus on hypoxia issues related to the Gulf of Mexico. NASA Civil Servants support to coordinate and assist relationships on hypoxia issues with potential paratenrs (EPA, Gulf Alliance, others), including early-FY07 assessment on opportunities and potential partners.</p>				Budget (\$K)	
				FY07	200
Project Monitor/ Center	Other NASA Centers	Timeframe	Partners	FY08	100
Terry McPherson SSC		FY03 - FY08	NRL, NOAA, ACT, others	FY09	0
				FY10	0
				FY11	0
Principal Investigator(s)		Erik Malaret-ACT, Bob Arnone-NRL		Other Apps.	
Earth Science Products	mission: Terra, Aqua, QuikSCAT, Jason, NPP, others				
	sensor:				
	products:				
		models: Coastal-ocean models NCOM, ADCIR			
Deliverables	<u>Description</u>		<u>End Date</u>	<u>IBPD Metric #</u>	
	Project Plan-FY06 HAB				
	Benchmark Report-HABs		12/15/200		
	Demonstration-HAB		1/20/2006		
	FY06-08 Transition Approach		12/1/2006		
	Semi-annual reports				
Benchmark report-Other DSS		9/1/2008			
Notes:					

Project: ROSES2005 & Decisions Augmentation				Solicited / Competitively	
<p>The purpose of this project is to assess the potential for MODIS/AVHRR water temperature data to improve the performance of DAM's zone closures used in conditions conducive to the presence of right whales for the reduction of right whale deaths in the Gulf of Maine.</p> <p>Project focuses on use of Earth science observations and models to support dynamic area management (DAM) zones for closure when conditions conducive for presence of right whales exist. Project will incorporate near-real-time satellite data in a copepod growth model alongside a high-resolution atmosphere-ocean circulation model to predict northern right whale aggregation areas in the Gulf of Maine. In an effort to reduce northern right whale deaths, the project will incorporate MODIS/AVHRR water temperature data and phytoplankton concentration information into the coupled models to create right whale likelihood feeding maps. The right whale maps will minimize aerial survey time, allow further evaluation of future management options, and the maps will be used by the community to reduce northern right whale deaths caused by fishing gear and boat collisions.</p>				<i>Budget (\$K)</i>	
				FY07	199
<i>Project Monitor/ Center</i>	<i>Other NASA Centers</i>	<i>Timeframe</i>	<i>Partners</i>	FY08	190
Ben Holt JPL		FY06 - FY09	NOAA, Univ.	FY09	0
				FY10	0
				FY11	0
<i>Principal Investigator(s)</i>		<i>Andrew Pershing, Univ. of Maine</i>		<i>Other Apps.</i>	
<i>Earth Science Products</i>	mission: <i>SST (MODIS), Wind (QuikSCAT), Chlorophyll</i>				
	sensor: products: models:				
<i>Deliverables</i>	<u><i>Description</i></u>		<u><i>End Date</i></u>	<u><i>IBPD Metric #</i></u>	
	Project Plan				
	Evaluation Report				
	V&V / Prototype Demonstration		9/1/2008		
	V&V / Operational Demo.		2/1/2009		
	Benchmark report		4/1/2009		
<i>Notes:</i> Budget is shared with Ecological Forecasting (only half of total budget shown above). Received Decisions04-Augmentation funding (FY05 funds).					

Project: ROSES2005				Solicited / Competitively	
<p>The purpose of this project is to assess the potential for the integration of TOPEX, Jason, QuikSCAT, SeaWiFS, Terra, and Aqua to improve the performance of the fishing industry's DST used in improving the long-term sustainability of fish stocks and protect the ecosystem for enhanced forecasts to help maximize social and economic benefits while reducing economic impact.</p> <p>The projects seeks to integrate TOPEX, Jason, QuikSCAT, SeaWiFS, Terra, Aqua and state-of-the-art coupled physical – biogeochemical 3D model products into ecosystem management practices and fisheries forecasting. The project focuses on Peruvian anchovy fishery as a testbed for use of tools in similar environments along the US West Coast. This project incorporates sea surface temperature and height, ocean wind vectors, chlorophyll data, and near real-time ocean color data sets into an ecosystem-modeling component. These data will be used in the fishing industry's decision support tool to improve the long-term sustainability of fish stocks and protect the ecosystem of which the fish are an integral part – enhances forecasts help maximize social and economic benefits while reducing the economic impact.</p>				<i>Budget (\$K)</i>	
				FY07	165
<i>Project Monitor/ Center</i>	<i>Other NASA Centers</i>	<i>Timeframe</i>	<i>Partners</i>	FY08	166
Ben Holt JPL		FY06 - FY09	NOAA, Peru	FY09	0
				FY10	0
				FY11	0
<i>Principal Investigator(s)</i>		<i>Francisco Chavez, MBARI</i>		<i>Other Apps.</i>	
<i>Earth Science Products</i>	mission: <i>TOPEX, Jason, QuikSCAT, SeaWiFS, Terra, Aqua</i> sensor: products: models: <i>biogeochemical 3D model</i>				
<i>Deliverables</i>	<u><i>Description</i></u>		<u><i>End Date</i></u>	Funding is shared with Ecological Forecasting	
	Project Plan		1/1/2008		
	Evaluation Report		1/1/2008		
	V&V / Prototype Demonstration		10/1/2009		
	V&V / Operational Demo		1/1/2009		
	Benchmark report		8/1/2009		
<i>Notes:</i> Budget is shared with Ecological Forecasting (only half of total budget shown above) Budget is proposed (pre-negotiation) figure.					

Project: ROSES2005				Solicited / Competitively	
<p>The purpose of this project is to assess the potential for QuikSCAT, MODIS, NCOM, and Jason-1 products to improve the performance of 's WAVCIS products used in used by MMS and others in Gulf of Mexico to monitor subsidence, wetlands loss, and effects of major meteorological events for mitigating environmental emergencies.</p> <p>The Wave-Current-Surge Information System decision support tool (WAVCIS DST) supports monitoring of subsidence, wetland loss, energetic meteorological events and human induced changes to the ecosystem. This project incorporates QuikSCAT wind data, sea surface temperature, total suspended matter, chlorophyll, Colored Dissolved Organic Matter, and reflectance data from MODIS, and Jason-1 sea surface height into the WAVCIS DST. NRL nested coastal model (NCOM) products of the Gulf coast will provide 3-D ocean current, temperature, salinity and sea level variation data. The enhanced DST will provide information on storm surges and the effects on near-shore coastal environments and change detection, giving managers needed information following environmental emergencies.</p>				<i>Budget (\$K)</i>	
				FY07	300
<i>Project Monitor/ Center</i>	<i>Other NASA Centers</i>	<i>Timeframe</i>	<i>Partners</i>	FY08	305
Project Monitor C. Hall	SSC, Others	FY06 - FY09	MMS, LaDNR, NDBC, NWRC	FY09	0
				FY10	0
				FY11	0
<i>Principal Investigator(s)</i>		<i>Eurico D'Sa, LSU-Coastal Studies Institute</i>		<i>Other Apps.</i>	
<i>Earth Science Products</i>	mission: <i>SST (MODIS), Wind (QuikSCAT), Chlorophyll</i>				
	sensor:		Ecological Forecasting		
products:					
models:					
<i>Deliverables</i>	<u><i>Description</i></u>		<u><i>End Date</i></u>	<u><i>IBPD Metric #</i></u>	
	Project Plan		1/1/2008		
	Evaluation Report		1/1/2008		
	V&V / Prototype Demonstration		10/1/2009		
	V&V / Operational Demo.		1/1/2009		
	Benchmark Report		8/1/2009		
<i>Notes:</i> Budget is proposed (pre-negotiation) figure.					

Project: ROSES 2007-2011					Solicited / Competitive	
<p>The purpose of this project is to assess the potential for solicited projects using NASA Earth Science Research (especially models and future sensors) to improve the performance of NOAA, EPA, NRL, and other agencies’s Coastal Decision Support Systems and Sea Level Change assessments used in Coastal Hazards, Resource Management, Planning, Water Quality, and Ecosystem Management for coastal public, environmental, and economic prosperity..</p> <p>Coastal Management Program will participate in Science Mission Directorate ROSES solicitations. Projects are 3-year efforts. Possible topics for the solicitations include: ROSES 2007 (start FY08): sea level change, fisheries, water quality and coastal pollution, search and rescue</p> <p>ROSES 2008 (start FY09): sea level change, hypoxia, sediments, fsiheries, wetlands management; ROSES 2009 (start FY10): HAB, oil spills, shipping, marine sanctuaries, water quality and pollution; ROSES 2010 (start FY11): sea level change, hypoxia, search and rescue, marine mammals, and coral reefs; ROSES 2011 (start FY12): Wetlands management, water quality, fisheries, oil spills, storm surge, HAB</p>				<i>Budget (\$K)</i>		
				FY07	0	
<i>Project Monitor/ Center</i>	<i>Other NASA Centers</i>	<i>Timeframe</i>	<i>Partners</i>	FY08	417	
Assigned once projects selected	HQ	FY07 - FY13	Multiple	FY09	750	
				FY10	1021	
				FY11	1021	
<i>Principal Investigator(s)</i>				<i>Other Apps.</i>		
<i>Earth Science Products</i>	mission: <i>Strong emphasis on use of upcoming NASA</i>					
	sensor: <i>Strong emphasis on use of upcoming NASA sensors</i>					
		products:				
		models: <i>Strong emphasis on use of Earth science models,</i>				
<i>Deliverables</i>	<u><i>Description</i></u>	<u><i>End Date</i></u>	<u><i>IBPD Metric #</i></u>			
	ROSES 2007 Projects (2008-2010)	9/30/2010				
	ROSES 2008 Projects (2009-2011)	9/30/2011				
	ROSES 2009 Projects (2010-2012)	9/30/2012				
	ROSES 2010 Projects (2011-2013)	9/30/2013				
<i>Notes:</i> Notes: *** Total National Apps. funds (planned) *** ROSES 2007: 18M (over 3 years) - Coastal approx. 1.25M (over 3 years) ROSES 2008: 15M (over 3 years) - Coastal approx. 1.0M (over 3 years) ROSES 2009: 12M (over 3 years) - Coastal approx. 0.8M (over 3 years) ROSES 2010: 18M (over 3 years) - Coastal approx. 1.25M (over 3 years)						

B. Directed Projects

The program supports directed projects to serve issues of critical strategic and tactical importance, including near-term opportunities with potential for high-return in developing relationships with partner organizations and where timeliness is critical to maintain.

Project: Resource Management: Marine Fisheries					Directed	
<p>This project implements four project concepts identified at a joint NASA/NOAA Workshop in May 2006 Integrating Satellite Data into Ecosystem-Based Management of Living Marine Resources. The workshop selected four project concepts for funding:</p> <ul style="list-style-type: none">- Reducing Uncertainty in Alaskan Sablefish Recruitment Estimates- Using Satellite Date to Improve Short-Term Recruitment Predictions for Georges Bank Cod and Haddock Stocks- Improving Rebuilding Plans for Overfished West Coast Fish Stocks through Inclusion of Climate Information- Integrating Environmental, Fisheries, and Electronic Tag Data to Characterize Essential Sea Turtle Habitat in Areas of Significant Bycatch <p>Information on the workshop is available at the following website: http://www.pfeg.noaa.gov/events/workshops/NASAworkshop2006/</p>				<i>Budget (\$K)</i>		
				FY07	75	
<i>Project Manager and Center</i>	<i>Other NASA Centers</i>	<i>Timeframe</i>	<i>Partners</i>	FY08	0	
Ben Holt JPL		FY07 - FY08	NOAA	FY09	0	
				FY10	0	
				FY11	0	
<i>Principal Investigator(s)</i>				<i>Other Apps.</i>		
<i>Earth Science Products</i>	mission: <i>Geophysical parameters (SST, SSH, Winds, Chl a,</i>					
	sensor: products: models: <i>Models (fvCOM, others)</i>					
<i>Deliverables</i>	<u>Description</u>		<u>End Date</u>	<u>IBPD Metric #</u>		
	Project Plan		11/1/2006			
	Assessment & V&V status		6/1/2007			
	Demonstration		8/1/2007			
	Final Report/Benchmark		9/15/2007			
<i>Notes:</i> Projects began in FY07 based on FY06 funding. Shared with Ecological Forecasting program element.						

Project: Coastal Hazards: Search and Rescue					Directed	
<p>This project focuses on the application of Earth science products to support Coast Guard search and rescue operations. The USCG is developing an improved Search and Rescue Operational Planning System (SAROPS) to track and predict the location of floating and drifting objects. This project is looking at the use of MODIS, Jason, QuikSCAT, HYCOM, SSM/I, CODAR, and other products to improve object trajectory predictions in SAROPS in order to reduce the time required to locate individuals and property lost at sea.</p> <p>In FY07, this project is a solely a proof-of-concept study and a prototype demonstration. The program may solicit for this topic or may direct fund a project (depending on results of prototype) - FY08-9 funding is placeholder for partial funding.</p>				Budget (\$K)		
				FY07	240	
Project Manager and Center	Other NASA Centers	Timeframe	Partners	FY08	125	
John Moison	GSFC-WFF	FY07 - FY07	US Coast Guard	FY09	125	
				FY10	0	
				FY11	0	
Principal Investigator(s)				Other Apps.		
Earth Science Products	mission: Aqua, Terra, Jason, SeaWinds, SSM/I, TerraSAR					
	sensor: MODIS, QuikSCAT, CODAR					
		products:				
		models: HYCOM				
Deliverables	Description		End Date	IBPD Metric #		
	Project Plan		12/15/200			
	Prototype Demonstration		6/1/2008			
	Report		8/1/2008			
Notes: This project is based on a ROSES05 proposal based on a proposal to ROSES05.						

Project: Water Quality: Chesapeake Bay					Directed	
<p>This project focuses on the application of MODIS and other Earth science products related to the Chesapeake Bay and coastal water quality. For the one-year effort, the project focuses on supporting the Chesapeake Bay DSS using Chl a, Kd, TSS, and DO, test proposed techniques, and develop a prototype to determine the potential value. In FY07, this project is largely designed as a proof-of-concept to assess techniques that may help with assessing the health status of coastal waterways. The program may solicit for this topic or may direct fund a project (depending on results of prototype) - FY08-9 funding is placeholder for partial funding.</p> <p>Co-funding from Water Management program.</p>					Budget (\$K)	
					FY07	120
Project Manager and Center	Other NASA Centers	Timeframe	Partners	FY08	125	
GSFC	GSFC, SSC, JPL	FY07 - FY07	ChesBay Prog Office, EPA	FY09	125	
				FY10	0	
				FY11	0	
Principal Investigator(s)				Other Apps.		
Earth Science Products	mission: MODIS, ASTER, other sensors and models					
	sensor:					
products:				Funding shared with Water Management		
models:						
Deliverables	Description		End Date	IBPD Metric #		
	Project Plan		12/1/2006			
	Prototype Demonstration		6/15/2007			
	Prototype Report		9/1/2007			
Notes: Shared with Water Management program.						

Project: Coastal Planning: Sea Level Change					Directed	
<p>This project focuses on the use of NASA Earth science research results to support activities associated with sea level change, such as assessing impacts, mitigation, or adaptation related to subsidence, inundation, intrusion, storm surge, and effects on estuaries.</p> <p>In FY07, this project focuses particularly on assessing opportunities to use NASA Earth science research products in serving coastal resource management activities related directly or indirectly to sea level change. Activities may also draw on Solutions Network and RPC efforts to assess potential ISSs. The program expects to solicit for projects in ROSES07 and future solicitations. If no proposals are selected, the program may consider initiating a project in FY08 & FY09 associated with this critical topic.</p>				Budget (\$K)		
				FY07	25	
Project Manager and Center	Other NASA Centers	Timeframe	Partners	FY08	50	
Callie Hall FY09	SSC, GSFC, JPL	FY07 - FY09	NOAA CSC	FY09	50	
				FY10	0	
				FY11	0	
Principal Investigator(s)				Other Apps.		
Earth Science Products	mission: Significant focus on use of future satellite sensors,					
	sensor:					
		products:				
		models: Coastal/Ocean models and Geophysical				
Deliverables	Description		End Date	IBPD Metric #		
	Opportunities Report		4/1/2007			
	Other activities dependent on report					
Notes: This activity will likely be supported by Solutions Network and RPC in these years and prior, especially to help scope/scale the project initially.						

Project: Resource Management/Water Quality: Sediments					Directed	
<p>This project is examining the potential of NASA Earth science research results to support sediment management activities.</p> <p>Funding for FY07 activities is based on FY06 carryover for Coastal Management at SSC (\$175K). Funding in FY08 & FY09 is placeholder; actual amounts (if any) will depend on project plan and progress, selections from ROSES07, and funding availability.</p>				Budget (\$K)		
				FY07	0	
Project Manager and Center	Other NASA Centers	Timeframe	Partners	FY08	72	
Callie Hall	SSC	FY07 - FY09	EPA, NOAA	FY09	110	
				FY10	0	
				FY11	0	
Principal Investigator(s)				Other Apps.		
Earth Science Products	mission:					
	sensor:					
	products:					
	models:					
Deliverables	Description		End Date	IBPD Metric #		
	Project Plan		12/15/200			
	Assessment		4/1/2007			
	Status Report to Proceed		8/1/2007			
Notes: This program will begin in FY07 using carry-over funds SSC has from FY06. Project is part of SSC competency development.						

Project: Coastal Program Management - Labor					Directed	
Program personnel – Civil Servant time and on/near-site contractors. Monitor projects, support interagency, national, regional, and international working groups. Develop joint development plans, studies, and white papers. Prepare journal articles. FY07: Deputy Prog. Man. 0.7FTE; Support (SSC or elsewhere) 0.7 WYE FY08: Deputy Prog. Man. 0.7FTE; Support (SSC or elsewhere) 0.7 WYE FY09: Deputy Prog. Man. 0.6FTE; Support (SSC or elsewhere) 0.7 WYE FY10: Deputy Prog. Man. 0.6FTE; Support (SSC or elsewhere) 0.7 WYE FY11: Deputy Prog. Man. 0.6FTE; Support (SSC or elsewhere) 0.7 WYE				Budget (\$K)		
				FY07	240	
Project Manager and Center	Other NASA Centers	Timeframe	Partners	FY08	238	
Callie Hall	SSC and others	FY07 - FY11		FY09	220	
				FY10	220	
				FY11	220	
Principal Investigator(s)				Other Apps.		
Earth Science Products	mission: sensor: products: models:					
	Deliverables	<u>Description</u>		<u>End Date</u>	<u>IBPD Metric #</u>	
Project Plan						
Assessment and V&V report						
Demonstration						
Final report/Benchmark						
Quarterly Reports						
Notes: Quarterly reports on all projects.						

Project: Coastal Hazards					Directed	
<p>Coastal Hazards covers HAB, Hypoxia, Storm Surge, Oil Spills, and Search and Rescue. The program currently has projects in all areas (REASoN project is transitioning to Hypoxia in FY07).</p> <p>In FY07, the program is developing relationships to support the Hypoxia transition (see REASoN project) and supporting proof-of-concept for search and rescue. The program is allocating funding in FY10 & FY11 for projects, and the specific topic(s) within this theme will depend on results from solicitations.</p>					<i>Budget (\$K)</i>	
					FY07	0
<i>Project Manager and Center</i>	<i>Other NASA Centers</i>	<i>Timeframe</i>	<i>Partners</i>	FY08	0	
Project Monitor	JPL, GSFC, SSC	FY07 - FY11	EPA, NOAA	FY09	0	
				FY10	100	
				FY11	110	
<i>Principal Investigator(s)</i>				<i>Other Apps.</i>		
<i>Earth Science Products</i>	mission:					
	sensor: <i>MODIS, QuikSCAT.</i>					
	products: <i>ocean color, SST, winds</i>					
		models: <i>ROMS</i>				
<i>Deliverables</i>	<u><i>Description</i></u>		<u><i>End Date</i></u>	<u><i>IBPD Metric #</i></u>		
	Project Plan		11/1/2009			
<i>Notes:</i>						

Project: Coastal Ecosystem Management					Directed	
<p>Coastal Ecosystem Management: Wetlands Management, Coral Reefs, Marine Sanctuaries. The program currently has activities related to wetlands restoration through the WAVCIS project (ROSES05) and the PNNL-led project.</p> <p>In FY07, the program expects to examine opportunities related to wetlands management and seek SN candidate solutions for potential ISS projects to pursue/solicit in future ROSES. The program expects to examine opportunities and SN ideas related to marine sanctuaries in FY09-10 for future solicitations.</p> <p>The program is allocating funding in FY10 & FY11 for start-up efforts or projects, and the specific topics within this theme will depend on results from investigations and solicitations.</p>					<i>Budget (\$K)</i>	
					FY07	0
<i>Project Manager and Center</i>	<i>Other NASA Centers</i>	<i>Timeframe</i>	<i>Partners</i>	FY08	0	
Project Monitor	JPL, GSFC, SSC	FY07 - FY11		FY09	0	
				FY10	100	
				FY11	90	
<i>Principal Investigator(s)</i>				<i>Other Apps.</i>		
<i>Earth Science Products</i>	mission: sensor: products: models:					
<i>Deliverables</i>	<u>Description</u> Project Plan		<u>End Date</u> 11/1/2009	<u>IBPD Metric #</u>		
<i>Notes:</i>						

Project: Resource Management					Directed	
<p>Resources Management: Fisheries, Marine Mammals, Sediments, and Shipping. The program currently has activities related to fisheries and marine mammals (ROSES05) and sediments project.</p> <p>In FY07, the program expects to examine opportunities related to sediments and seek SN candidate solutions for potential ISS projects to pursue/solicit in future ROSES. The program expects to examine opportunities and SN ideas related to shipping (routing) in FY08-9 for future solicitations.</p> <p>The program is allocating funding in FY10 & FY11 for start-up efforts or projects, and the specific topic(s) within this theme will depend on results from investigations and solicitations.</p>					<i>Budget (\$K)</i>	
					FY07	0
<i>Project Manager and Center</i>	<i>Other NASA Centers</i>	<i>Timeframe</i>	<i>Partners</i>	FY08	0	
Project Monitor	JPL, GSFC, SSC	FY07 - FY11		FY09	0	
				FY10	70	
				FY11	85	
<i>Principal Investigator(s)</i>				<i>Other Apps.</i>		
<i>Earth Science Products</i>	mission: sensor: products: models:					
<i>Deliverables</i>	<u><i>Description</i></u> Project Plan		<u><i>End Date</i></u> 11/1/2009	<u><i>IBPD Metric #</i></u>		
<i>Notes:</i>						

Project: Water Quality					Directed	
<p>Water Quality: Coastal pollution, Urban interface/stormwater, HAB/Hypoxia. The program currently has activities related to HAB (REASoN) .</p> <p>In FY07, the program will pursue a water quality prototype effort, and the program will pursue water quality users of HAB-Gulf data created through the REASoN project. The program also expects to examine opportunities related to coastal pollution in ROSES07 and seek SN candidate solutions for potential ISS projects to pursue/solicit in future ROSES. The program expects to examine opportunities and SN ideas related to shipping (routing) in FY08-9 for future solicitations.</p> <p>The program is allocating funding in FY10 & FY11 for start-up efforts or projects, and the specific topic(s) within this theme will depend on results from investigations and solicitations.</p>					<i>Budget (\$K)</i>	
					FY07	0
<i>Project Manager and Center</i>	<i>Other NASA Centers</i>	<i>Timeframe</i>	<i>Partners</i>	FY08	0	
Project Monitor	JPL, GSFC, SSC	FY07 - FY11		FY09	0	
				FY10	100	
				FY11	70	
<i>Principal Investigator(s)</i>				<i>Other Apps.</i>		
<i>Earth Science Products</i>	mission: sensor: products: models:					
<i>Deliverables</i>	<u>Description</u> Project Plan		<u>End Date</u> 11/1/2009	<u>IBPD Metric #</u>		
<i>Notes:</i>						

C. Congressionally-Directed Activities

The program oversees Congressionally-directed activities associated with coastal management issues. The project teams for Congressionally-directed activities are responsible for developing, managing, and reporting on technically-credible and appropriately-budgeted projects aligned with the NASA Applied Sciences Program objectives. The Coastal program team interacts with the recipients to align their activities appropriately and facilitates interaction with the program's partners and other investigators.

Project: Pacific Northwest & Gulf of Mexico Collaboratory				Congressionally-directed	
<p>Gulf of Mexico Regional Collaborative (GoMRC) project The objective of GoMRC is to develop an integrated, working, prototype IT infrastructure for Earth science data, knowledge and models for the Gulf region, and to demonstrate its ability to help decision-makers better understand critical Gulf-scale issues in at least one application area. The collaboratory addresses science, information, and outreach. The value of the prototype IT platform will be demonstrated initially on coastal wetlands assessment to support planning and restoration strategies in the Gulf of Mexico. The activities focus on the data fusion/integration of federal/state/regional data sets to support Harmful Algal Blooms, Wetlands Restoration, and Sea Level Change issues.</p> <p>Pacific Northwest Regional Collaboratory (PNWRC) project Pacific Northwest National Laboratory (PNNL) is collaborating with five additional regional institutions to collectively develop and sustain the Pacific Northwest Regional Collaboratory. The PNWRC’s primary purpose is to enhance the delivery of NASA and other earth science applications tools and data to help Federal, state and local users in the Pacific Northwest region of the US deal more effectively with their serious water, land and sustainability needs. The five projects focus on Invasive Cheatgrass Monitoring, Water Management, Coastal Assessment, Atmospheric Impacts on Homeland Security Systems, and Northwest Explorer.</p> <p>Half of the funds support the Pacific Northwest Collaboratory and half the funds support the Gulf of Mexico implementation of the Collaboratory.</p>				<i>Procurement Budget (\$K)</i>	
				FY07	0
<i>Project Manager and Center</i>	<i>Other NASA Centers</i>	<i>Timeframe</i>	<i>Partners</i>	FY08	0
NASA monitor:	SSC	FY06 - FY07	UAH, NOAA	FY09	0
				FY10	0
				FY11	0
<i>Principal Investigator(s)</i>		Sara Graves/UAH		<i>Other Apps.</i>	
<i>Earth Science Products</i>	mission: MODIS, QuikSCAT, NCOM				
	sensor:				
	products:				
<i>Deliverables</i>	models:				
<i>Deliverables</i>	<u>Description</u>	<u>End Date</u>	<u>IBPD Metric #</u>		
	Project Plan	11/01/200			
	Status Report	4/01/2007			
	Demonstration/Prototype assessment	8/01/2007			

Program has connected the Gulf of Mexico project personnel with PIs from REASoN-HAB and ROSES-WAVCIS projects to collaborate on project.

Notes:

Budget: \$3716K in FY06 earmark funds used for FY07 activities.

Project: Mississippi Coastal Disaster Inventory Initiative					Congressionally Directed	
The proposal is to conduct research on the Alabama-Mississippi-Louisiana barrier island chain, from Dauphin Island to the Chandeleur Islands. Most of these islands are part of the NPS Gulf Islands National Seashore or the National Wildlife Refuge System (FWS). Plan to use historical maps, photos, RS data, as well as in situ surveys to map changes in vegetation. The idea is to track serial succession after tropical storms and hurricanes, and determine its connection with the changes in landscape geomorphology. Outcomes may include predicting storm impacts, as well as recommendations for vegetation / habitat management.				Procurement Budget (\$K)		
				FY07	0	
Project Manager and Center	Other NASA Centers	Timeframe	Partners	FY08	0	
NASA monitor C. Hall	SSC	FY06 - FY07	TBD	FY09	0	
				FY10	0	
				FY11	0	
Principal Investigator(s)		David Mooneyhan and Greg Carter, USM		Other Apps.		
Earth Science Products	mission: MODIS, QuikSCAT, NCOM sensor: products: models:					
Deliverables	Description		End Date	IBPD Metric #		
	Project Plan		11/01/200			
	Status Report		4/01/2007			
	Demonstration/Prototype assessment		8/01/2007			
Notes: Budget: \$929K in FY06 earmark funds used for FY07 activities.						

V. Program Management & Crosscutting Solutions Support

A. Program Management Activities

The Coastal program conducts activities that contribute to the overall management, advocacy, and success of the program. Activities include studies and assessments in informal planning, interagency working group participation, publications and journal articles, support for conferences and workshops, program team meetings, and other related endeavors.

Project: Program Management: Conferences and Communications					
Sponsor workshops/conferences and support conference booths. Odd years: Coastal GeoTools, CoastalZone (15K for both) Also, support to coastal targets of opportunity and conferences that arise and other opportunities to communicate the plans and results of the NASA Coastal Management Program.				Budget (\$K)	
				FY07	12
Project Manager and Center	Other NASA Centers	Timeframe	Partners	FY08	0
Lawrence Friedl HQ	SSC, GSFC, ARC, MSFC, JPL	Annual - Annual	Determined with activity.	FY09	10
				FY10	0
				FY11	15
Principal Investigator(s)				Other Apps.	
Earth Science Products	mission: sensor: products: models:				
Deliverables	Description		End Date	IBPD Metric #	
	Coastal GeoTools				
	Coastal Zone				

Selected 2006-2008 Coastal-related Conferences

Coastal GeoTools – Myrtle Beach, SC, Mar. 3-8, 2007

Coastal Zone 07 – Portland, OR, Jul. 22-26, 2007

Notes:

AGU Fall Meeting – San Francisco, CA, Dec. 10-15, 2006

24th MMS Information Transfer Meeting – New Orleans, Jan. 9-11, 2007

ASLO Aquatic Sciences Meeting – Santa Fe, NM, Feb. 4-9, 2007

Ocean Sciences Meeting – Orlando, FL, Mar. 2 -7, 2008

Project: Studies, Reports and Assessments					
A. Model and Observation Potentials FY07: Succint, thorough review of coastal-ocean models and potential to the Coastal Management application activities. 35K (if not done by FTE/WYE already supported). Remaining funds to support succinct assessment of MMS use of NASA Earth science data (see Section B below). FY07-11: Succint, thorough assessments of upcoming Earth observation sensors relating to Coastal Management application activities and potential benefits. 15K each. FY07: Aquarius, OSTM FY08: Glory FY09: OCO FY10: LDCM FY11: GPM B. Other reports In FY07, the program will assess partnership opportunities with MMS to use NASA Earth science research products (including REASoN products); activities may include projects to serve immediate, critical opportunities to integrate NASA products in MMS's activities. Activities may also draw on Solutions Network and RPC efforts to assess potential ISS. FY09: Update to Coastal Strategic Plans; 35K FY08 & FY10 studies dependent on solicitation efforts.				Budget (\$K)	
				FY07	65
Project Manager and Center	Other NASA Centers	Timeframe	Partners	FY08	50
Lawrence Friedl HQ	SSC, GSFC, JPL, others	FY07 - FY11	-----	FY09	50
				FY10	50
				FY11	15
Principal Investigator(s)				Other Apps.	
Earth Science Products	mission: OSTM, Aquarius, Glory, OCO, LDCM, GPM				
	sensor:				
	products:				
models:					
Deliverables	Description		End Date	IBPD Metric #	
	Aquarius assessment		4/1/2007		
	OSTM assessment		4/1/2007		
	Coastal-Ocean model assessment		5/1/2007		
	Glory assessment		3/01/2008		
	OCO assessment		3/01/2009		
	LDCM assessment		3/01/2010		
	GPM assessment		3/01/2011		
Notes: Activities and assessment performed by Solutions Network, contract support, or NASA Center personnel, as appropriate for the information and analysis needs of the program.					

Project: Program Management: Committees and Working Group					
Support Coastal-related committees through direct financial support or in-kind services. Support GEO Coastal Community of Practice and User Interface Committee Conduct an annual Coastal Management team meeting and Coastal Working Group meeting to discuss status, progress, results, plans, and directions for the NASA Coastal Management program.				Budget (\$K)	
				FY07	8
Project Manager and Center	Other NASA Centers	Timeframe	Partners	FY08	10
Lawrence Friedl HQ	SSC, GSFC, ARC, MSFC, JPL	Annual - Annual	Determined with activity.	FY09	10
				FY10	10
				FY11	10
Principal Investigator(s)				Other Apps.	
Earth Science Products	mission:				
	sensor:				
	products:				
	models:				
Deliverables	Description		End Date	IBPD Metric #	
	Coastal GeoTools				
	Coastal Zone				

Selected 2006-2008 Coastal-related Conferences

Coastal GeoTools – Myrtle Beach, SC, Mar. 3-8, 2007

Coastal Zone 07 – Portland, OR, Jul. 22-26, 2007

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AGU Fall Meeting – San Francisco, CA, Dec. 10-15, 2006

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ASLO Aquatic Sciences Meeting – Santa Fe, NM, Feb. 4-9, 2007

Ocean Sciences Meeting – Orlando, FL, Mar. 2 -7, 2008

B. Crosscutting Solutions Support

The Coastal program works with the Crosscutting Solutions Element within the Applied Sciences Program to develop project concepts and enable coastal management objectives. The program expects to pursue the following activities with the four Crosscutting Solutions sub-elements:

Integrated Benchmark Solutions

The Coastal program plans to utilize the Rapid Prototyping Capability that the Applied Sciences Program supports at various locations and NASA Centers to identify candidate configurations for possible integrated system solutions. The program plans to select a subset of the candidate configurations for inclusion in the following year's ROSES solicitation. The Coastal program focuses the RPC activities on the following coastal issues and DSTs for FY07-11:

FY07:

Hypoxia

FY08: Coastal pollution, sediments

FY09: Wetlands management, oil spills

FY10: Sea level change, shipping

FY11: Coastal pollution & water quality

Solutions Networks

The Coastal program plans to work with the Solutions Network activity to identify research results that may be candidates for Integrated System Solutions, especially to generate candidate solutions for priority coastal topics.

FY07: sediments, wetlands management, hypoxia, sea level issues

FY08: oil spills, shipping, coastal pollution, marine sanctuaries

FY09: search and rescue, marine mammals, coral reefs, sea level issues, hypoxia

FY10: storm surge, fisheries, coastal pollution, wetlands management, oil spills

FY11: sediments, sanctuaries, shipping, sea level issues

DEVELOP

The program expects to pursue the following coastal-related projects with the DEVELOP program in FY07, FY08, and FY10.

FY07:

Stormwater & Coastal Pollution

FY08: Wetland management

FY10: Fisheries

GIO

The program expects to pursue the following coastal-related projects with the DEVELOP program in FY07, FY08, and FY10.

FY07: ESIP Coastal Cluster Data Issues

FY08: GEO NetCast products;

FY09: Sea level change data interoperability

FY10: Regional/National transitions

FY11: Regional/National transitions

VI. Budget: FY07-11

The following table lists the Costal Management Program budget for FY2007 - FY2011:

<u>Project</u>	<u>FY07</u> <u>(\$K)</u>	<u>FY08</u> <u>(\$K)</u>	<u>FY09</u> <u>(\$K)</u>	<u>FY10</u> <u>(\$K)</u>	<u>FY11</u> <u>(\$K)</u>
REASON-NRL/ACT HAB-Hypoxia	200	100	0	0	0
ROSES 2005 & Decisions Aug.-Marine Mammals	199	190	0	0	0
ROSES2005-Fisheries Peru (with Eco Forec.)	165	166	0	0	0
ROSES 2005 - WAVCIS	300	305	0	0	0
Project Solicitations: ROSES 2007-2011	0	417	750	1021	1021
Resource Management: Marine Fisheries-NOAA Workshop projects	75	0	0	0	0
Hazards: Search and Rescue	240	125	125	0	0
Water Quality: Chesapeake Bay	120	125	125	0	0
Coastal Planning: Sea Level Change	25	50	50	0	0
Resource Management: SSC Sediments Water Quality	0	72	110	0	0
Coastal Hazards	0	0	0	100	110
Congressionally-directed: Pacific Northwest & Gulf of Mexico Collaboratory	0	0	0	0	0
Congressionally-directed: Mississippi Coastal Disaster Inventory Initiative	0	0	0	0	0
Program Management: Conferences & Coastal Working Group	12	0	10	0	15
Program Labor	240	238	220	220	220
Program Management: Reports, Studies and Assessments	65	50	50	50	15
Program Management - Committees	8	10	10	10	0
Resource Management	0	0	0	70	85
Water Quality	0	0	0	100	70
Coastal Ecosystem Management	0	0	0	100	90
Total = \$	1649	1848	1450	1671	1626

VII. Schedule and Milestones for Coastal Mangement

<i>Project</i>	<i>Start Date</i>	<i>Deliverable</i>	<i>End Date</i>
REASON	FY03	Benchmark Report-HABs	11/1/2006
		Demonstration-HAB	11/15/2006
		FY06-08 Transition Approach	11/1/2006
		Benchmark report-Other DSS	9/1/2008

<i>Project</i>	<i>Start Date</i>	<i>Deliverable</i>	<i>End Date</i>
ROSES 2005 & Decisions Augmentation	FY06	V&V / Prototype Demonstration	9/1/2008
		V&V / Operational Demo.	2/1/2009
		Benchmark report	4/1/2009

<i>Project</i>	<i>Start Date</i>	<i>Deliverable</i>	<i>End Date</i>
ROSES 2005	FY06	Project Plan	1/1/2008
		Evaluation Report	1/1/2008
		V&V / Prototype Demonstration	10/1/2009
		V&V / Operational Demo.	1/1/2009
		Benchmark report	8/1/2009

<i>Project</i>	<i>Start Date</i>	<i>Deliverable</i>	<i>End Date</i>
ROSES 2005	FY06	Project Plan	1/1/2008
		Evaluation Report	1/1/2008
		V&V / Prototype Demonstration	10/1/2009
		V&V / Operational Demo.	1/1/2009
		Benchmark report	8/1/2009

<i>Project</i>	<i>Start Date</i>	<i>Deliverable</i>	<i>End Date</i>
Project Solicitations: ROSES 2007-2011	FY07	ROSES 2007 Projects (2008	9/30/2010
		ROSES 2008 Projects (2009	9/30/2011
		ROSES 2009 Projects (2010	9/30/2012
		ROSES 2010 Projects (2011	9/30/2013

<i>Project</i>	<i>Start Date</i>	<i>Deliverable</i>	<i>End Date</i>
Marine Fisheries	FY07	Project Plan	11/1/2006
		Assessment & V&V status	6/1/2007
		Demonstration	8/1/2007
		Final Report/Benchmark	9/15/2007

<i>Project</i>	<i>Start Date</i>	<i>Deliverable</i>	<i>End Date</i>
Coastal Regulations	FY07	Project Plan	12/1/2006
		Prototype demonstration	3/1/2008
		Benchmark Report	8/1/2008

<i>Project</i>	<i>Start Date</i>	<i>Deliverable</i>	<i>End Date</i>
Coastal Search and Rescue	FY07	Project Plan	12/1/2006
		Prototype Demonstration	6/1/2008
		Report	8/1/2008

<i>Project</i>	<i>Start Date</i>	<i>Deliverable</i>	<i>End Date</i>
Coastal Water Quality - Chesapeake Bay	FY07	Project plan	10/1/2006
		Prototype demonstration	3/1/2007
		Prototype report	8/1/2007

<i>Project</i>	<i>Start Date</i>	<i>Deliverable</i>	<i>End Date</i>
Sea Level Change / Estuaries	FY09	Project Plan	8/30/2007
		Assessment and V&V status	9/1/2009
		Demonstration	6/1/2010
		Final Report/Benchmark	9/1/2010

<i>Project</i>	<i>Start Date</i>	<i>Deliverable</i>	<i>End Date</i>
Coastal Pollution	FY09	Project Plan	11/1/2008
		Assessment & V&V report	9/30/2009
		Demonstration	6/1/2010
		Final report/benchmark	9/1/2011

<i>Project</i>	<i>Start Date</i>	<i>Deliverable</i>	<i>End Date</i>
Pacific Northwest & Gulf of Mexico Collaboratory Congressionally-directed	FY06	Project Plan	11/01/2006
		Status Report	4/01/2006
		Demonstration/Prototype	8/01/2007

<i>Project</i>	<i>Start Date</i>	<i>Deliverable</i>	<i>End Date</i>
Mississippi Coastal Disaster Inventory Initiative	FY06	Project Plan	11/01/2006
		Status Report	4/01/2006
		Demonstration/Prototype	8/01/2007

<i>Project</i>	<i>Start Date</i>	<i>Deliverable</i>	<i>End Date</i>
Program Management: Conferences	Annual	Coastal GeoTools	
		Coastal Zone	

<i>Project</i>	<i>Start Date</i>	<i>Deliverable</i>	<i>End Date</i>
Program Management: Personnel	Annual	Coastal GeoTools	
		Coastal Zone	

<i>Project</i>	<i>Start Date</i>	<i>Deliverable</i>	<i>End Date</i>
Reports and Assessments	FY07	GEO Coastal Process Analysis	11/15/2006
		OSTM assessment	3/1/2007
		Coastal-Ocean model assessment	4/1/2007
		NPP	3/01/2008
		Aquarius assessment	3/01/2009
		NPOESS	3/01/2010
		Upcoming missions	3/01/2011

VIII. Program Measures

The Coastal Management team uses measures to track progress within and across projects to ensure the program meets its goal and objectives. The measures are in two categories: Program Management measures are internally-focused to assess how the program conducts its activities, including the inputs, outputs, production, quality, and efficiency of projects. Performance measures are externally-focused to assess if the program's projects and activities are serving their intended purpose. The management team analyzes these measures retrospectively in order to make adjustments proscriptively to the program approach and objectives.

Program Management Measures (Internally-focused):

Range of products used in NOAA Fisheries projects

Number and range of REASoN products used by NOAA for HAB; number used by additional users identified by program that work in the Gulf (e.g., MMS, PNNL)

Performance Measures (Externally-focused):

Fisheries – value to stock assessment & reduction in uncertainty

HAB – change in NOAA metrics regarding HAB Bulletin

Marine Mammal - value to marine mammal avoidance processes; impact of improved process to reduce marine mammal hits

In addition to the stated measures, the Coastal Management program periodically requests an assessment of its plans, goals, priorities, and activities through external review. The National Academy of Sciences National Research Council is reviewing the Applied Sciences Program (including the Coastal Management program) in FY06-07. The program expects another review of the program in the FY10 timeframe.

Appendix A: Program Element Partners

A. Program Management

Program Manager:

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B. Coastal Management Network & Partners

The program element maintains a network of organizations and points-of-contact associated with coastal management activities.

Earth Science System Division and NASA Center Partners:

Applied Sciences & NASA Centers:

Water & Energy Cycle Theme.....	Jared Entin, NASA HQ
Carbon Cycle and Ecosystems Theme.....	Diane Wickland, NASA HQ
Climate Variability and Change Theme.....	Don Anderson, NASA HQ
Ocean Biogeochemistry.....	Paula Bontempi, NASA HQ
Physical Oceanography.....	Eric Lindstrom, NASA HQ
Business & Budget.....	Joan Haas, NASA HQ

Stennis Space Center (SSC)..... Terry McPherson

□

Goddard Space Flight Center (GSFC).....	Peter Hildebrand / Gene Feldman
GSFC-Wallops Flight Facility (WFF).....	John Gerlach
Ames Research Center (ARC).....	Liane Guild

Federal Partners:

NOAA: National Ocean Service (NOS), National Marine Fisheries Service (NMFS),
National Environmental Satellite, Data and Information Service (NESDIS), NESDIS National Coastal Data &
Distribution Center (NCDDC), NOS Coastal Services Center (CSC)

US EPA: Office of Water (OW), Office of International Activities (OIA), Office of Environmental Information
(OEI), Office of Research and Development (ORD), Gulf of Mexico Program Office (GMPO)

NRL

Army Corps of Engineers

Minerals Management Service

Interagency Organizations

Oceans.US, Subcommittee on Ocean Science and Resource Management Integration (SIMOR), Joint
Subcommittee on Ocean Science and Technology (JSOST), CENR Ecosystems

Regional Associations

The U.S. Ocean Action Plan directs the Executive branch agencies to support regional collaborations on oceans,
coasts, and Great Lakes policy in partnership with leadership of states, localities, and tribes. Entering FY06, the
program is directly involved with two regional efforts -- the Great Lakes Interagency Task Force (created from a
2004 Executive Order; <http://epa.gov/greatlakes/collaboration/taskforce/>) and the Gulf of Mexico Alliance (<http://www.gulfofmexicoalliance.org>). The program expects other regionally-oriented efforts to develop and will
support those efforts also, as appropriate.

International, National and Regional Organizations Partners

Coral Reef Taskforce

Ocean Conservancy

Coastal States Organization

Coastal America

Coastal Alliance

Urban Harbors Institute

Coastal Conservation Association

IGOS: Integrated Global Observing Strategy (Coastal Theme)

Ecology and Oceanography of Harmful Algal Blooms (ECOHAB)

The Applied Sciences Program website contains additional information about national and regional organizations and their points of contact regarding this program element:

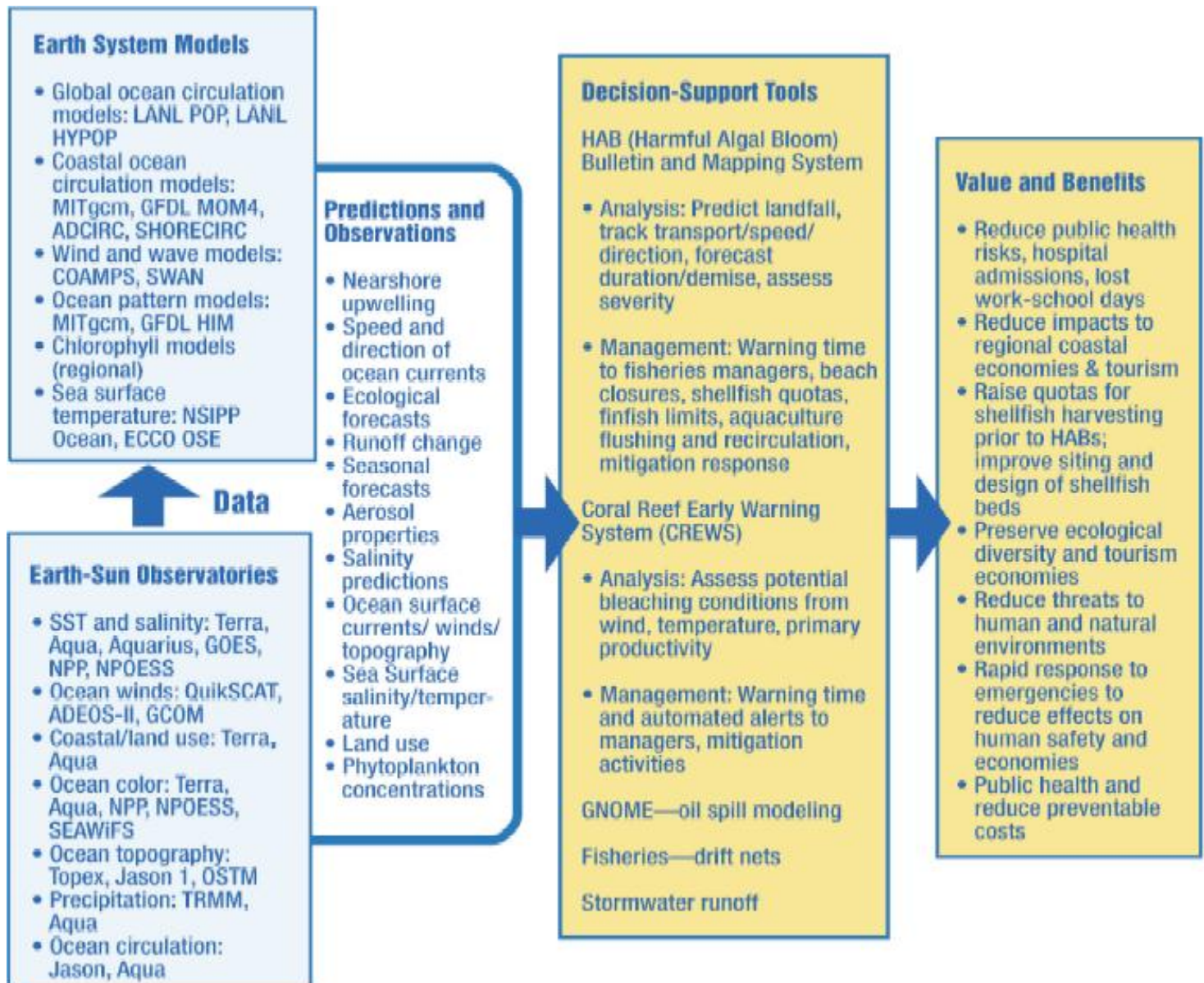
Applied Sciences Program: <http://science.hq.nasa.gov/earth-sun/applications>

Coastal Management Element: <http://science.hq.nasa.gov/earth-sun/applications/theme5.htm>

Appendix B: Roadmaps

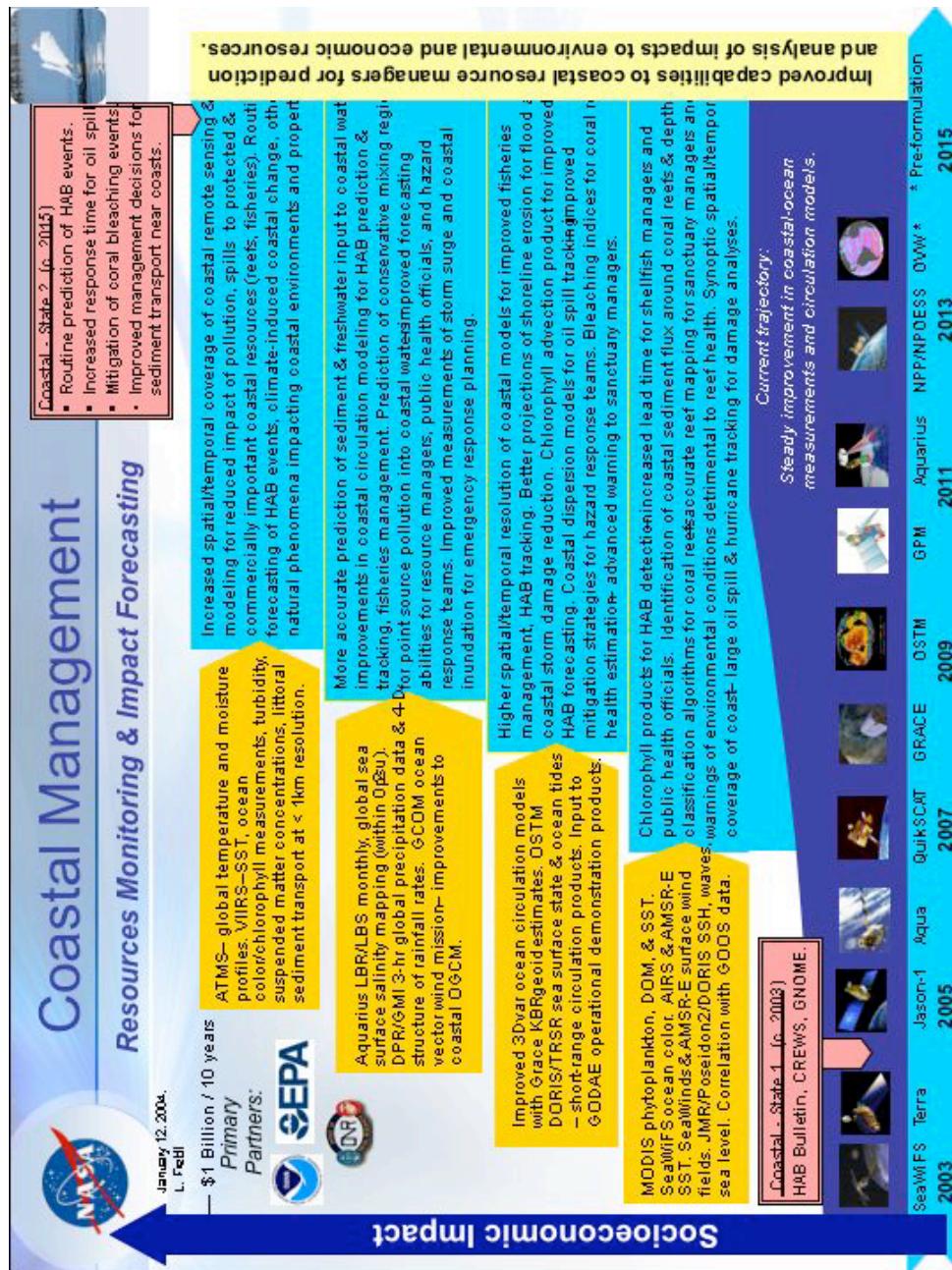
A. Integrated System Solutions Diagram

The figure below illustrates a candidate configuration the extension of Earth science measurements, model products, and data fusion techniques to support Coastal Management partners, their decision support tools, and benefits of Earth science to society. Results from Earth Science System are typically observations, data sets, climate data records, algorithms, and models utilizing the observations. For Coastal Management, observations include measures of sea surface temperature, sea surface height, wind speed and direction, ocean color, salinity, and coastal land-cover/use. Models use these and other measurements to generate predictions of coastal and ocean conditions, such as upwelling, primary productivity, and currents. The Coastal Management program works with partners on methods for their decision support tools - HAB Bulletin, CREWS/ReefBase, GNOME, others - to ingest Earth science observations and predictions and, in turn, improve the capabilities of their tools to support their decision processes.



B. Roadmap

The figure below illustrates the evolving, progressive nature of links between the increasing capabilities of NASA-supported research, measurement systems, and technology and their extension to partners' management and policy responsibilities. The yellow bars on the left state the expected research and developments from Earth system science and technology; the blue bars to the right reflect the contributions of the research in terms of improved management capabilities. Each level shows a steady improvement in the measurements and research along with enhanced management capabilities and public value. This Coastal application roadmap builds on the roadmaps of the six ESE Science Focus Areas, particularly the Water & Energy Cycle Theme, Carbon Cycle and Ecosystems Theme, and the Climate Variability and Change Theme.



Appendix C: Acronyms

ACT	Applied Coherent Technologies
ADCRIC	Advanced Circulation Model
AGU	American Geophysical Union
AMS	American Meteorological Society
AMSR	Advanced Microwave Scanning Radiometer
ARC	Ames Research Center
ASLO	American Society of Limnology and Oceanography
AVHRR	Advanced Very High Resolution Radiometer
BATS	Bermuda Atlantic Time-Series Study
CCRI	Climate Change Research Initiative
CCSP	Climate Change Science Program
CCTP	Climate Change Technology Program
CDOM	Colored Dissolved Organic Matter
CLEAR	Center for Land Use and Education Research
CO	Carbon Monoxide
CO ₂	Carbon Dioxide
CREWS	Coral Reef Early Warning System
CSC	Coastal Service Center
DAAC	Distributed Active Archive Center (Data Active Archive Center)
DEVELOP	No longer an acronym
DSS	Decision Support Systems
EAGLE-EYE	Ecological Assessment of Generalized Littoral Environments
ECOHAB	Ecology and Oceanography of Harmful Algal Blooms
EDR	Environmental Data Records
ELCIRC	Eulerian-Lagrangian Circulation
EOS	Earth Observing Systems
EPA	US Environmental Protection Agency
FEA	Federal Enterprise Architecture
FWS	Fish and Wildlife Service
FY	Fiscal Year
GES DAAC	Goddard Earth Science Distributed Active Archive Center
GHRC	Global Hydrology Resource Center
GIG	Global Information Grid
GLOBE	Global Learning and Observations to Benefit the Environment
GMES	Global Monitoring for Environment and Security
GNOME	General NOAA Oil Modeling Environment (Coastal Mgmt. DSS)
GOES	Geostationary Operational Environmental Satellite
GPM	Global Precipitation Measurement
GPMO	Gulf of Mexico Program Office
GSFC	Goddard Space Flight Center
HAB	Harmful Algal Bloom
IBPD	Integrated Budget and Performance Document
IGOS	Integrated Global Observations strategy
IWGEO	Interagency Working Group on Earth Observations
Jason	Spacecraft with instruments to study ocean surface topography
JCSDA	Joint Center for Satellite Data Assimilation
JPL	Jet Propulsion Laboratory
LaRC	Langley Research Center
LP DAAC	Land Processes Distributed Active Archive Center
MMS	Mineral Management Service (Malaria Monitoring and Surveillance)
MODIS	Moderate Resolution Imaging Spectroradiometer
NASA HQ	NASA Headquarters
NASA	National Aeronautics and Space Administration

NCAR	National Center for Atmospheric Research
NCDDC	National Coastal Data & Distribution Center
NCOM	Navy Coastal Ocean Model
NESDIS	National Environmental Satellite Data Information Service
NIP	New Investigators Program
NMFS	National Marine Fishery Service
NOAA	National Oceanic and Atmospheric Administration
NOS	National Ocean Service
NPOESS	National Polar-Orbiting Operational Environmental Satellite System
NPP	NPOESS Preparatory Project/Net Primary Productivity
NRL	Navy Research Laboratory
NSF	National Science Foundation
NWS	National Weather Service
OBEAM	Ocean Biogeochemical EOS Assimilation Model
OEA	Office of Environmental Information
OIA	Office of International Activities
OMB	Office of Management and Budget
ORD	Office of Research and Development
ORHAB	Olympic Region Harmful Algal Blooms
OSSE	Observing System Simulation Experiment
OSTM	Ocean Surface Topography Mission
OSTP	Office of Science and Technology Policy
OW	Office of Water
PART	Program Assessment Rating Tool
PO DAAC	Physical Oceanography Distributed Active Archive Center
POC	Point of Contact
POES	Polar Orbiting Environmental Satellites
POM	Princeton Ocean Model
QuikSCAT	Quick Scatterometer
QUODDY	Hydro Dynamic Model Developed by the North Carolina Coastal Observing System
R2O	Research to Operations Network
RACNE	Regional Applications Center for the Northeast
REASoN	Research, Education, and Applications Solutions Network
SEA	State Enterprise Architecture
SeaWiFS	Sea-viewing Wide-Field-of-View Sensor
SHORCIRC	SHORCIRC Near Shore Circulation Model
SSC	Stennis Space Center
SST	Sea surface temperature
SWAN	Solar Winds Anisotropies (Instrument from Finland)
TBD	To Be Determined
TOPEX/POSEIDON	Satellite from JPL with Five Instruments
TOS	The Oceanography Society
TRMM	Tropical Rainfall Measurement Mission
UCAR	University Corporation for Atmospheric Research
UCSB	University of California Santa Barbara
UCSD	University of California San Diego
UK	United Kingdom
U Md – CP	University of Maryland at College Park
UMBC	University of Maryland Baltimore County
UNH	University of New Hampshire
URI	University of Rhode Island
USACE	United States Army Corps of Engineers
USCG	United States Coast Guard
USGS	United States Geological Survey
V&V	Verification and Validation
VIIRS	Visible/Infrared Imager/Radiometer Suite
WFF	Wallops Flight Facility

NASA Science Mission Directorate
Earth Science Division - Applied Science Program
Coastal Management Program Element

This document contains the Coastal Management Program Element Plan for FY 2007-2011.

This plan derives from direction established in the NASA Strategic Plan, Earth Science Enterprise and Space Science Enterprise Strategies, Earth Science Applications Plan, and OMB/OSTP guidance on research and development. The plan aligns with and serves the commitments established in the NASA Integrated Budget and Performance Document.

The Program Manager and the Applied Sciences Program Leadership have reviewed the plan and agree that the plan appropriately reflects the goals, objectives, and activities for the Program Element to serve the Applied Sciences Program, Earth Science Division, NASA, the Administration, and Society.

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Date

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